

HU pallet system

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Pallet system with standard modules including pre-defined control logics

Flexlink's newly developed HU pallet system is primarily designed to be well positioned for demanding applications within the automotive segment.

are delivered in pre-assembled, standardized modules, including pre-defined control logics shortening configuration and installation time.

Lean-Green-Clean

It addresses important aspects of today's focus on:

- Available production time
- Energy consumption
- Electro mechanical functions
- Operator safety / ergonomics
- Cleanliness / noise

Easy data acquisition

The HU system is fully digitalized allowing easy data acquisition. The data is used in FlexLink's tools for line optimization and predictive maintenance. The conveyor platform is also included in FlexLink's tool for line design and simulation. It offers easy-to-use routing and track-and-trace software applications which allows advanced material flow to be configured rather than programmed.

Pre-defined modules and control logics

The platform is based on a new smart, twin-track conveyor designed for heavy loads up to 200 kg per pallet and can be an all-electrical solution. The pallet functions

Smart motors

The system has high connectivity and is equipped with smart motors which not only cut excessive working time, but also reduces wear and energy consumption. The smart motors also reduce the number of stops and dampers.

Double speed zones

By adding the Speed booster function for example in an operation station defined as a bottleneck, the speed of a single pallet can be doubled and the pallet change-over time will be reduced by 50%.

Examples of application areas

Manual and automatic assembly and test systems in the automotive and electrical/electronics industries.

Examples of products

Powertrain: Wheel suspension, brake disc, drive shafts, couplings, gearboxes, motor blocks, crankshafts

Powertrain (electric vehicles): electric motors, batteries, battery packs.

Cooling systems, car seats, kitchen appliance

Large bearings, wind mill/wheel/railways. Wheels for heavy air crafts, car instrument kits.

The HU platform is developed based on the FlexLink standardized controls concept. All functions on the line is build up by a number of different modules which is controlled by distributed controllers. The movements in each module are in an electrified version. The system builder will spend less hours on engineering and installation because all software needed to control the modules are pre-downloaded together with correct configuration. All cables needed are included with each module.

Distributed controller

The distributed controller has an embedded microcontroller. It can communicate up to a superior control system via either Ethernet/IP or PROFINET. Down to local components it can communicate with either discrete I/O or the CANopen bus. The controller is equipped with a preloaded firmware that contains logic for all module types in the HU. Information about which module each controller will control and exactly which I/O that are allocated is described in the configuration file.

All modules can be added with a controller responsible for the local control tasks. In these cases the modules are referred to as a *base module*. If the controller has some spare I/O-capacity it could also control adjacent modules. These modules are called *perifer modules*. All this is configured in the Flexlink design tool.

Power distribution boxes

Each module will have a power distribution box that feeds 24VDC power to a specific number of electrical components via M12 connectors. The power distribution box exists in two different sizes, one with eight outlets and one smaller with four outlets.

Cable kits

All modules have local cables for both power and signal. When a module is configured it generates a specific cable kit dedicated for the ordered variant. The cables will not have the exact length but have to be cut in the appropriate length when installed. Because of this reason all cables will be delivered in two parts. One connector with the cable and an open end and one connector with terminal connectors. All CANopen components are equipped with a daisy chain cable (also delivered in two parts as described above) and a T-connector.

Stepper motors

In transfer modules the lift and drive movement are realized using 24VDC high torque stepper motors. Modules with the electric version of the speed booster have a different kind of stepper motor. Both types are IP54 units with integrated drives. The lift and drive motors are communicating with CANopen while the speed booster motors are only communicating on a discrete output signal.

RFID

Modules can be ordered with RFID readers. The reader is mounted below the center of the pallet and reads the tags from beneath. Each pallet has a RFID holder in the bottom center area. The RFID unit is a M18 read / write head that is communicating via CANopen.

Drive motor

The drive motor of the twin track conveyor is a 120Hz motor that needs to be controlled from a frequency converter. The Motec 8400 is a wall mounted distributed inverter which can be configured for three different communication methods, CANopen, Ethernet/IP or PROFINET. For CANopen the controller could control the drive completely. The other two must be connected and controlled by a line controller. The Motec drive also exists in a standard I/O version with only discrete interface signal. Every Motec inverter is delivered in parts containing Wire unit, Drive unit, Communication unit and a motor cable.

Stop/Dampers

The stop and damper units exists in both electric and pneumatic versions. Both versions are controlled by discrete I/O connected to the controller. For pneumatic versions no pneumatic valves are included in the delivery.

- For pneumatic versions, no pneumatic values are included in the delivery.

Sensors

All sensors in the HU platform are inductive 4 mm sensing range.

Linear actuator

For the locating unit there are two linear actuators fixing the pallet. These have integrator controllers and sensors. The control interface is discrete I/O signals.

Design / Simulate / Order process

FlexLink DesignTool is strongly recommended to be used to build complete HU lines. It supports the module concept where all configurations are covered. When the line is designed from a mechanical view it needs to be added with distributed controllers. This control layer is added by the user either by adding controllers to all possible modules in an optimized way. After this it is possible to manually adjust the controller module connections. Modules that don't have a controller connection triggers a warning in the BOM. The BOM of the complete layout can be sent to Order Online for purchasing. When all modules are delivered the controller is already prepared with firmware and correct configuration data.

CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX

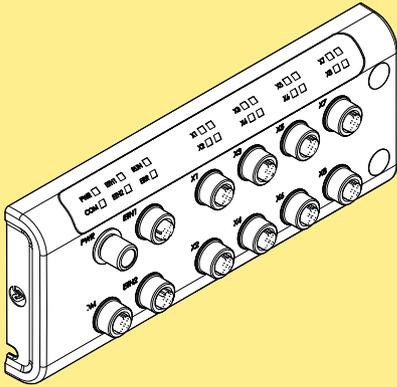
ePlan

All base modules have pre-designed ePlan drawings. A controller is included and all IOs are visible in the drawings. Modules that do not have their own controller (Peripheral modules) can have their IO allocation on a large number of different mappings combination. Because of this the IO allocation is not included in the drawings. The configuration file contains the information and it can be extracted from Configuration Tool.

Software

In the HU platform all modules have its own distributed logic completed in the controllers. The communication with the upper level control system (PLC) is implemented via PackML tags, which means the line logic is executed in the PLC and then commands to each modules are sent over Ethernet/IP or PROFINET.

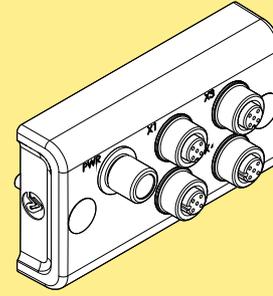
Controller for distributed controls



Controller

SCDC 12I40CAN

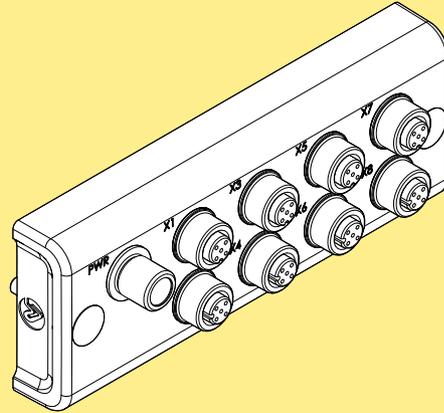
Power box



Power box 4 I/O
Bracket kit

**SCPD 424VDC16A
FLX1000458**

Power box



Power box 8 I/O
Bracket kit

**SCPD 824VDC16A
FLX1000396**

System	HU
Pallet	Pallet size:480x480 up to 1040x1040
Pallet thickness	12 mm and 20 mm
Permitted load/100 mm pallet length	20 kg
Max pallet weight	200 kg
Pallet material	Aluminium plate and conductive plastic frame
Chain type	Steel roller top chain with or without protection
Chain lubrication	Automatic lubrication unit
Chain option	For clean environments, roller top chain (no lubrication required)
Max accumulated weight on a single conveyor	1000 kg
Conveyor length (drive unit without slack unit)	363-10000 mm
Conveyor speed	5-15 m/min
Drive unit motor	Lenze 120 Hz incl. frequency inverter
Power source, Transfer module	Electric 24 V (pneumatic stop as an option)
Power source, Stop modules	Electric 24V (pneumatic stop as an option)
Repeatability, Stop module	+/-1 mm (pneumatic version as an option)
Power source, Locating unit	Electric, 24 V (pneumatic stop as an option)
Repeatability, Locating unit	+/-0,1 mm
Max vertical force, Locating unit	5000 N (pallet weight included)
Speed booster	Double the pallet speed locally
Queue damping option	Gently handling of the pallets in a queue
Controller	Distributed control of functions
RFID	13,56 MHz
Noise level	< 68 dBA

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

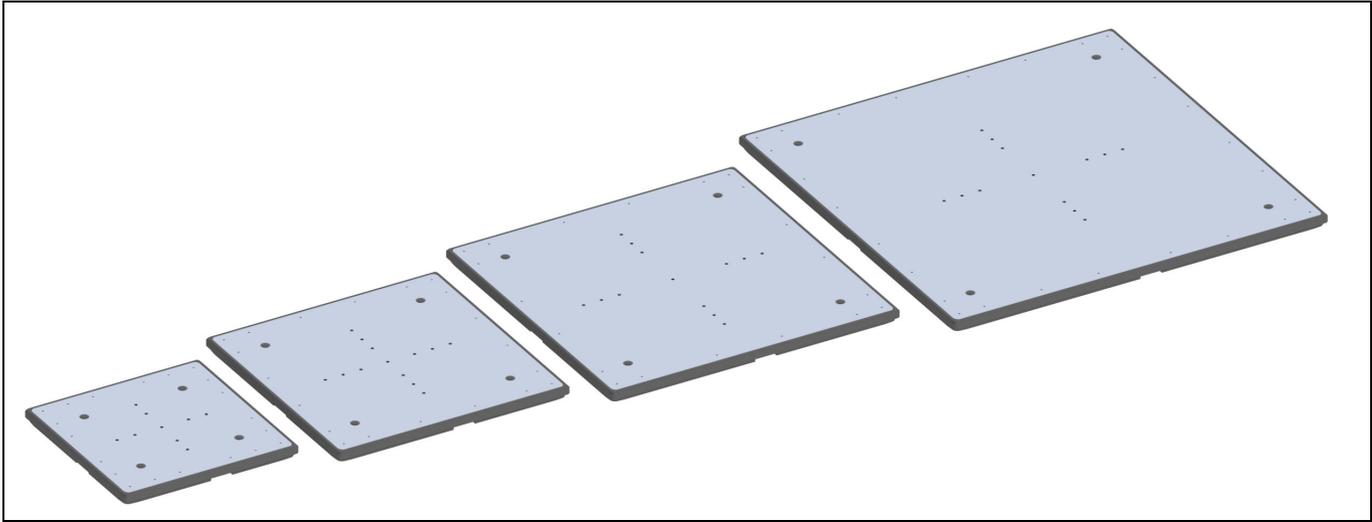
CTL

FST

TR

APX

IDX



Introduction

Nine standard pallet sizes are available from 480x480 mm up to 1040x1040 mm. A pallet can be configured and ordered with two alternative pallet plate thicknesses, 12 and 20 mm. Pallets are either fully assembled or ordered unassembled for easier customized machining of the pallet plate. For locally customized pallet plates the pallet frames can be delivered separately. Pallets are equipped with a predefined hole pattern.

The underneath frame includes initiator plates for detecting the pallet position in the conveyor.

The bushing holes are equipped with protection plugs from above for personal safety.

An RFID holder can be ordered as an option. The holder will be positioned at the center of the pallet bottom. The RFID tag is not included and has to be ordered separately.

Pallets can be specified using the web-based configurator or via Flexlink design tool. The configurator provides detailed information and step-by-step guidance in the specification process. A product code string is generated, containing the specification details.

Choices:

The pallet is fully defined only when following questions have been answered:

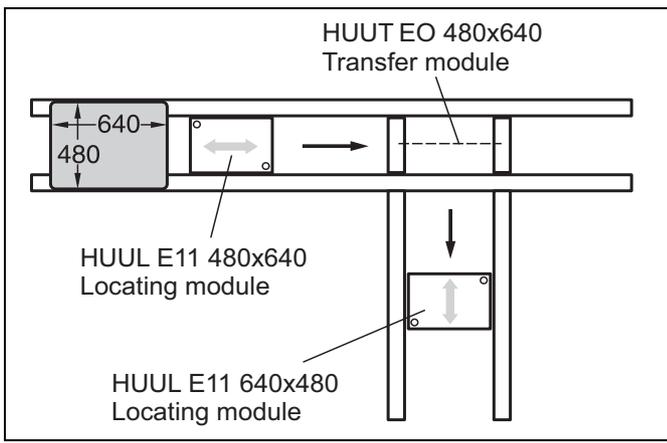
Question	Choices	Description code
Pallet width PW?	480 mm 640 mm 800 mm 1040 mm	480 640 800 1040
Pallet length PL?	480 mm 640 mm 800 mm 1040 mm	480 640 800 1040
Pallet plate?	Thickness 12 mm Thickness 20 mm No plate	12 20 No
Locating bushings?	yes no	LB No
RFID tag holder?	Yes no	RF No
Delivery form?	Assembled Unassembled kit	A K

Configurator output example:

Item No	Description
HUPP	480x480-12-LB-RF-A

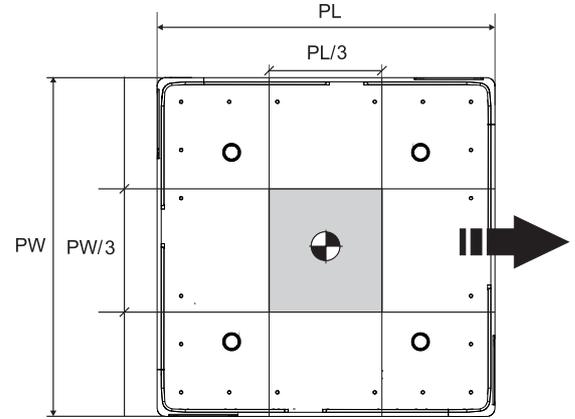
Pallet width (PW) × pallet length (PL)

PL is the pallet dimension in the direction of pallet movement in the main flow. In some modules the pallet moves “sideways”, for example when transferred from one line to another (see next figure).

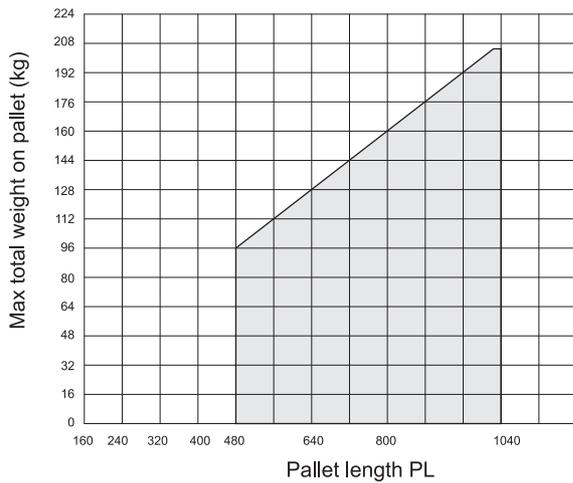


Pallet loading

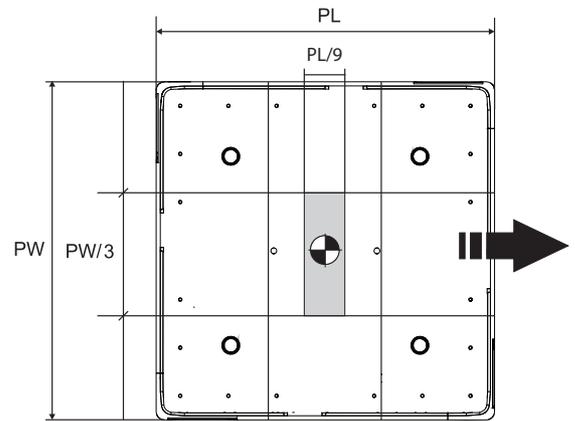
Centre of gravity on the pallet (including fixture) should be located within the grey marked area according to the picture below.



Max permissible pallet total weight vs pallet length PL:
(2 kg/cm)

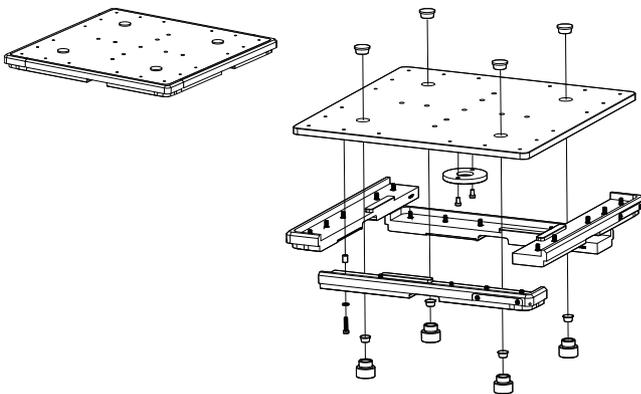


Centre of gravity when using transfers



Material specifications

- Pallet plate 12 mm or 20 mm ±0,1 Aluminium plate
- Frame Electrically conductive UHMW-PE

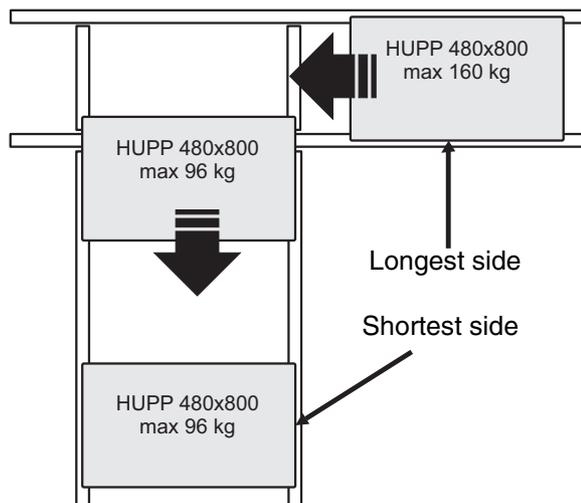


- P0
- CC
- X45
- XS
- X65
- X65P
- X85
- X85P
- XH
- XK
- XKP
- X180
- X300
- GR
- CS
- XT
- HU**
- WL
- WK
- XC
- XF
- XD
- ELV
- CTL
- FST
- TR
- APX
- IDX

Technical specifications

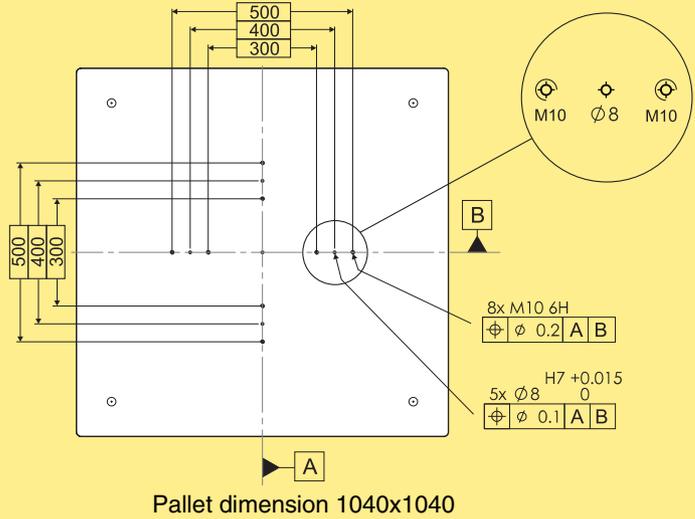
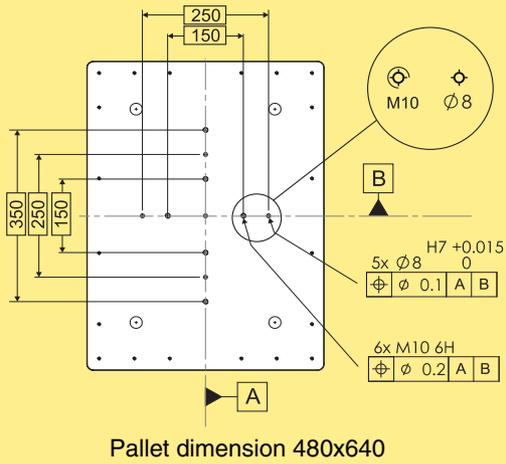
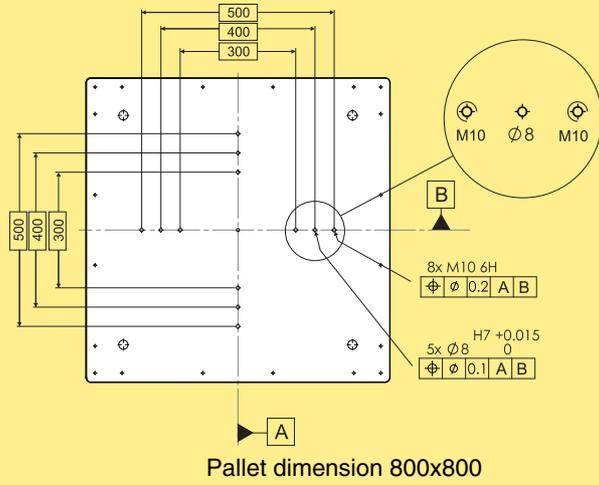
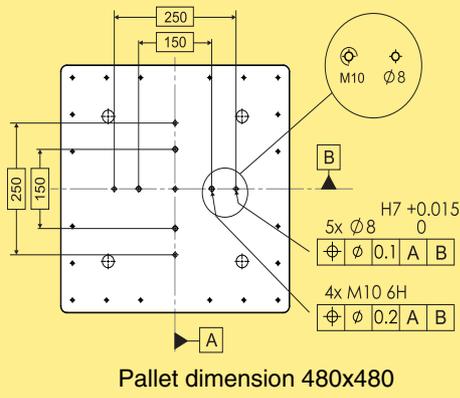
- Maximum load on the pallet is 2 kg per 10 mm of pallet length (PL).
- The table below shows maximum pallet load for each pallet size. Max. total weight 200 kg.

The shortest side may determine the maximum load on the pallet.



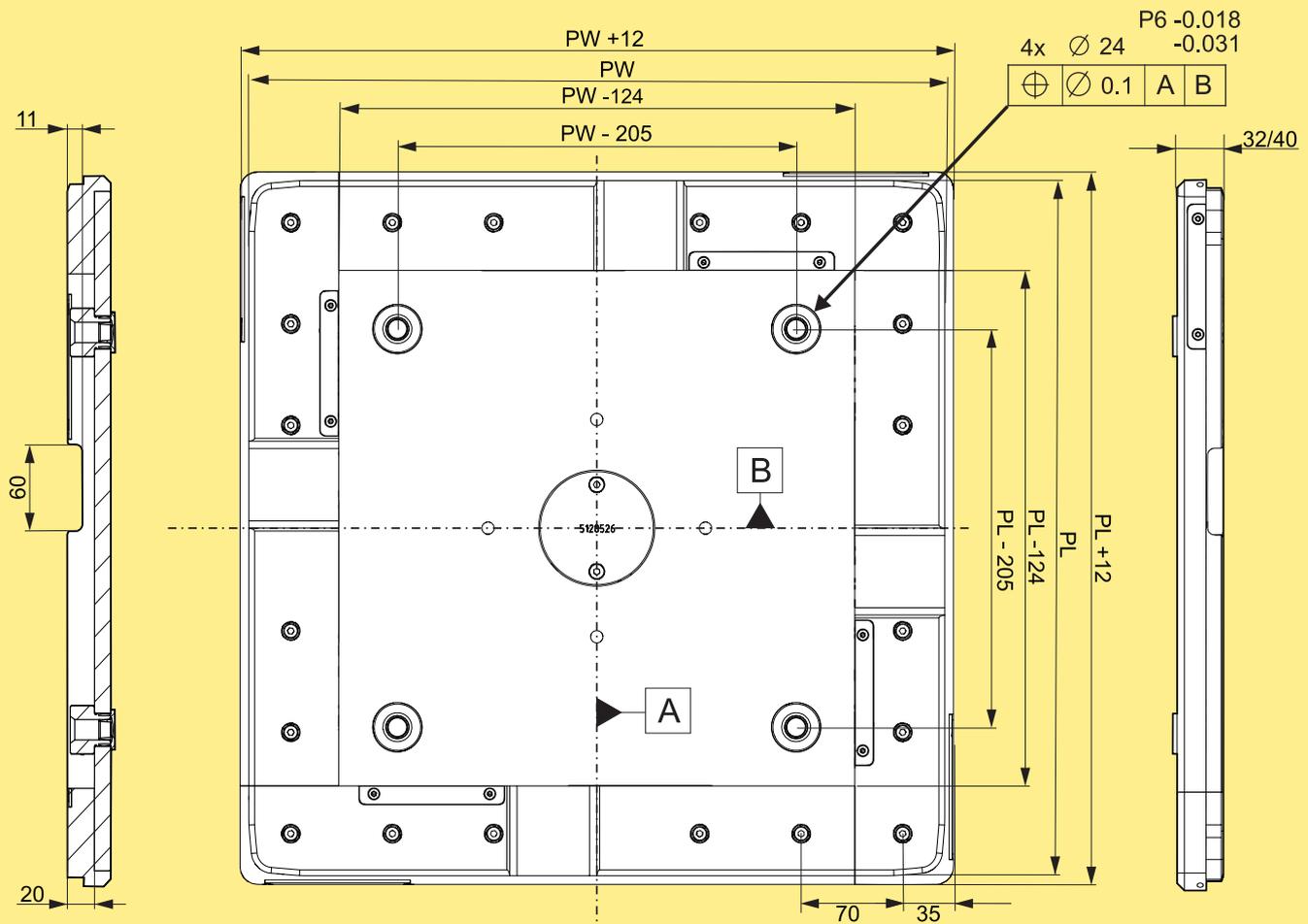
HUPP				2 kg/cm limited by shortest side		2 kg/cm limited by longest side			
PW	PL	Pallet plate thickness (mm)	Pallet weight (kg)	Max permissible total pallet weight	Max load on pallet (kg)	Max permissible total pallet weight	Max load on pallet (kg)	Only pallet frame (kg)	
480	480	12	10	96	86	96	86	2,4	
	640		13		83	128	115	2,8	
	800		16		80	160	144	3,2	
640	640		16	128	112	128	112	3,2	
	800		20		108	160	140	3,6	
	1040		26		102	200	174	4,3	
800	800		25	160	103	160	135	4	
	1040		31		97	200	169	4,7	
1040	1040		40	200	88	200	160	5,4	
480	480		20	15	96	81	96	81	2,4
	640			19		77	128	109	2,8
	800			24		72	160	136	3,2
640	640	25		128	103	128	103	3,2	
	800	31			97	160	129	3,6	
	1040	40			88	200	160	4,3	
800	800	38		160	122	160	122	4	
	1040	49			111	200	151	4,7	
1040	1040	63		200	137	200	137	5,4	

Pallet fixture holes



- P0
- CC
- X45
- XS
- X65
- X65P
- X85
- X85P
- XH
- XK
- XKP
- X180
- X300
- GR
- CS
- XT
- HU
- WL
- WK
- XC
- XF
- XD
- ELV
- CTL
- FST
- TR
- APX
- IDX

Pallet PW×PL



Pallet PW × PL mm

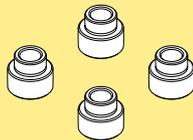
HUPP PW×PL

When ordering, insert the pallet width and the pallet length instead of PW×PL in the designation.

For building non-standard pallets in combination with customer supplied pallet plates. The bushings are designed for plate thickness 12 mm but can be used for 20 mm plates also and should be press-fitted into Ø24 mm P6 holes.

Pallet accessories

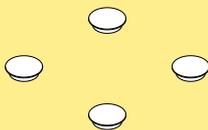
Bushing kit
Bushing x4 **5129111**



Mounting tool
for bushings **FLX1000817**



Bushing kit
Plug Kit dia.
24 mm, for
pallets with-
out bushings **5130751**



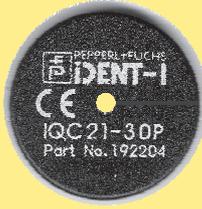
Plug Kit, for
pallets with
bushings **5129681**

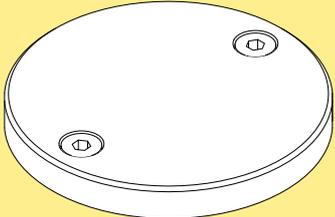


RFID components

Pallet HUPP can be configured and ordered including a RFID tag holder but the RFID tag itself has to be ordered separate. Two standard tag sizes 1024b or 16kb are available.

If the RFID option is ordered for a HU function module (locating module, stop module, transfer module) the RFID reader/writer and attachment is included in the module delivery.

RFID			
RFID tag IQC33-30, 16 kbit	5113120		
RFID tag IQC21-30 P, 1024 kbit	5113121	5113121	5113120

RFID		
Holder for RFID tag, dia. 30 mm	5129117	

Chains introduction

Three types of roller top chains can be chosen for different purposes, see table below. All chains are robust and durable pallet carriers in tougher production environments even for heavy pallets HUPP up to 200 kg. The free running roller top chain reduce the queue forces and the energy consumption drastically compared to standard chains or belts. The Roller top chains are supported by stainless steel rails inside the conveyor beam and the chain can carry pallet loads up to 20 kg/100 mm pallet length. The chain types SP and SN require recurrent lubrication while the chain type SC is maintenance free (see table below).

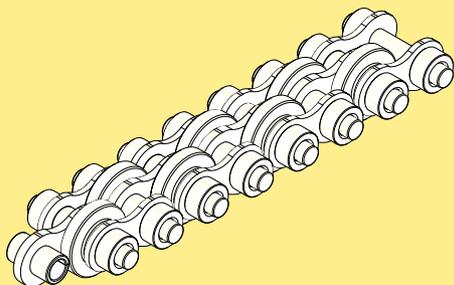
Due to the roller top chain design the pallet transport speed can locally and dynamically be doubled by adding a Speed booster unit. This is useful for example to reduce pallet exchange time in an operation identified as a production flow bottleneck. For detailed information see section; Speed Booster. All chains are delivered including

one Connecting link.

Lubrication

Designation	Use	Description	Lubrication required
HUTR_SP	Standard Chain	Chain with steel rollers, incl. protection	Yes
HUTR_SN	Chain for reversible drive	Chain with steel rollers, without protection	Yes
HUTR_SC	Chain for clean environment	Offset steel rollers. Maintenance free	No

Roller top chain, Clean environment

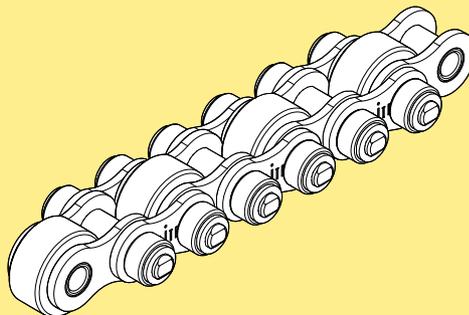


Roller top chain
Clean environment
steel rollers, 12m
steel rollers, 3 m
steel rollers, 6 m

HUTR 12B SC
HUTR 3B SC
HUTR 6B SC

For reversible drive

Roller top chain, without protection

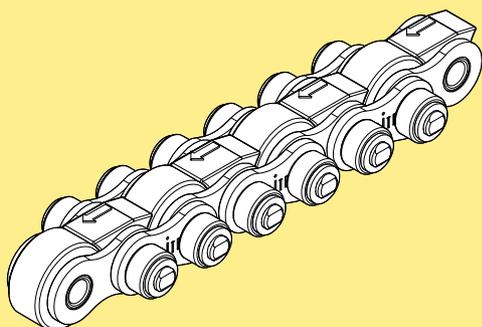


Roller top chain, without protection
steel rollers, 12 m
steel rollers, 3 m
steel rollers, 6 m

HUTR 12B SN
HUTR 3B SN
HUTR 6B SN

For reversible drive

Roller top chain, incl. protection



Roller top chain, incl. protection
steel rollers, 12 m
steel rollers, 3 m
steel rollers, 6 m

HUTR 12B SP
HUTR 3B SP
HUTR 6B SP

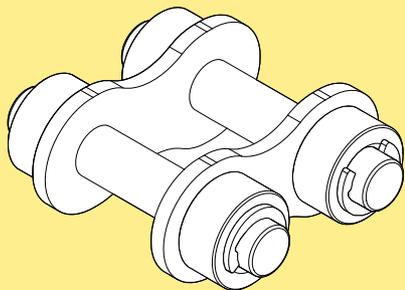
Chain accessories

Chains (3m, 6m. and 12m) are all delivered with a Connecting link included.

A chain breaker tool is needed to trim chains on site.

The amount of extra connecting links has to be calculated manually and ordered separate.

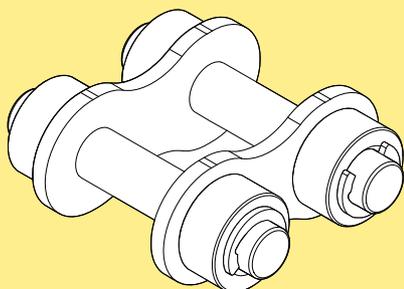
Connecting link for HUTR SP and HUTR SN



Connecting link

5129509

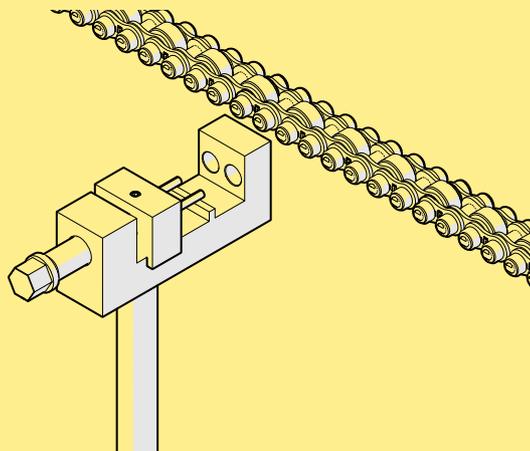
Connecting link for HUTR SC



Connecting link

5129562

Chain breaker tool



Chain breaker tool

HUMJ 08B

Conveyor beam section introduction

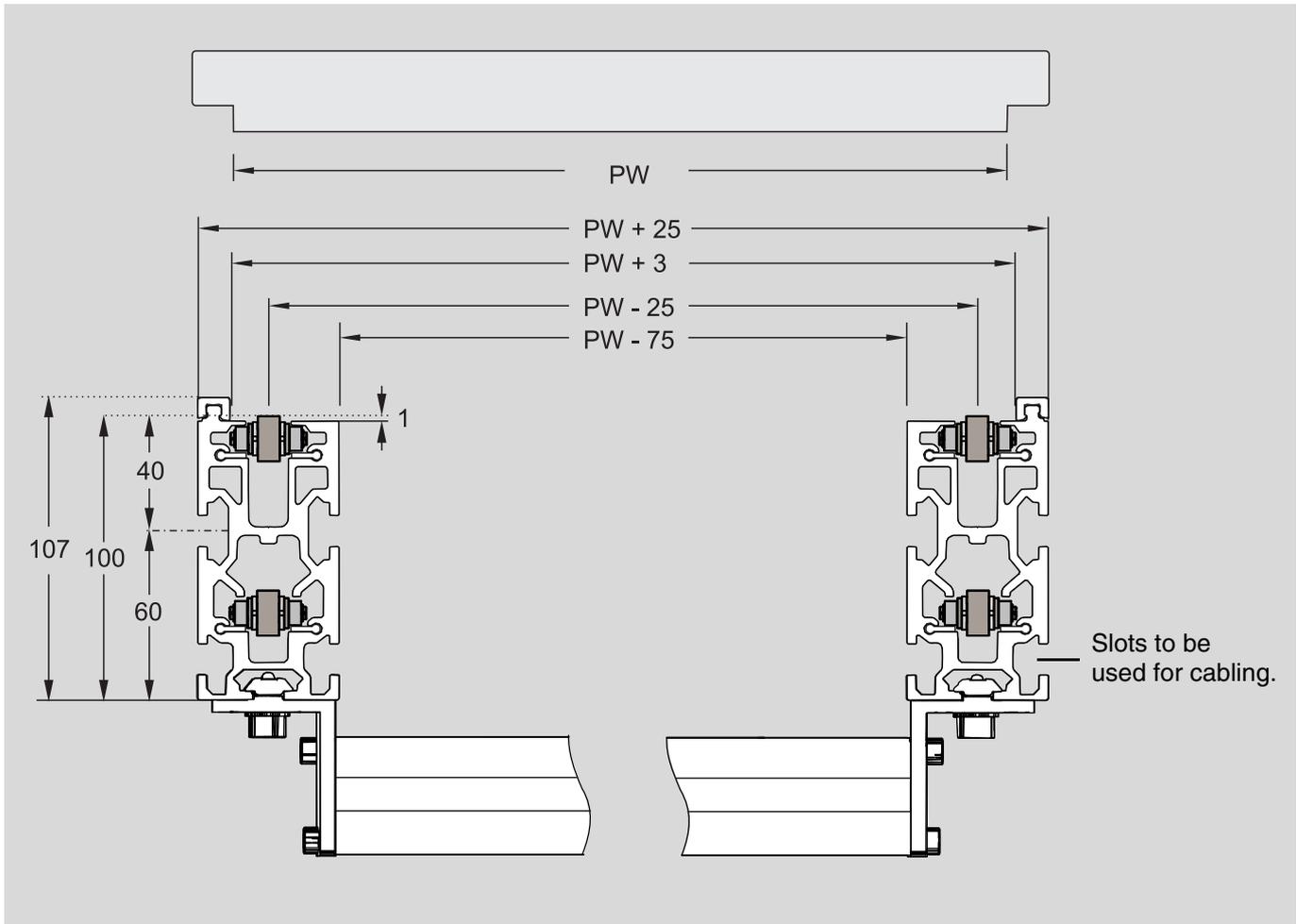
Conveyor beam sections are delivered as a pair with integrated slide rails. Cross bars are not included as conveyor supports and many modules acts as cross bars when built into the conveyor beam section. A cross bar has to be added to the order separately and used if the distance between two cross bars is more than 1500 mm.

To connect two Conveyor beam sections, 6 pcs Connection strips are needed. HUCB LD can be ordered in free length and by using Flexlink design tools pre-drilled holes can be included in HUCB LD for mounting the speed boosters at site.

The conveyor beams have a very high bending stiffness and require only Support modules every 3 meter.

A slot is integrated on both sides of the conveyor beam and can be used for cabling of sensor cables etc.

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX



Conveyor beam section

Steel slide rail

Plastic slide rail

99

60

50

8

11

Conveyor beam section
Length 3000 mm
Length to order (111- 3000 mm)

HUCB 3D
HUCB LD

The beam comes in pair of two and has the same T-slot as used in the XC structural system. Connecting strip XLCJ 5x140.

Conveyor beam accessories

Slide rails are included in the Conveyor beam sections but can be ordered as spare parts if needed. HUCR 3 T for the top Roller chain and HUCR 3 H for the return chain.

Note!
Guide rail cover HURT 25 H is not included in the conveyor beams sections and has to be ordered separately. Cover strips XCAC_ can be used to close T-slots if needed.

Extra cross bars to be used if the distance between two existing cross bars is more than 1500mm. Fasteners are included.

Support included in all modules normally carrying a stop or damper. Can be ordered separate for customized purposes.

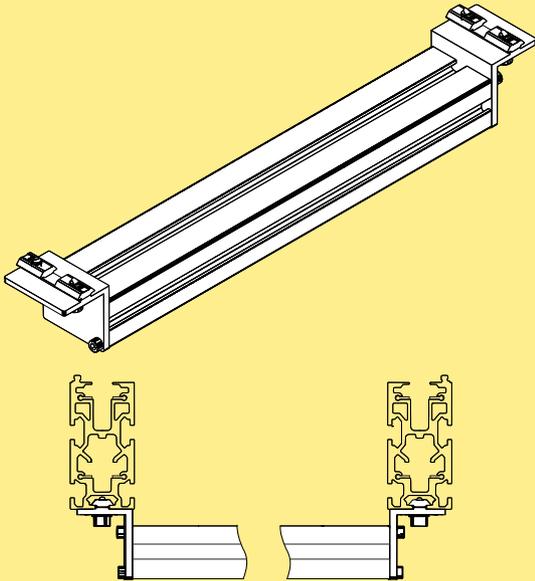
Connecting strip

Connecting strip

XLCJ 5X140

Including M8 screws. Contains 10 pcs.

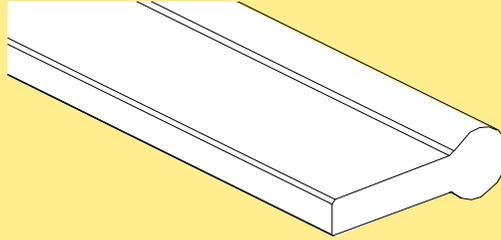
Cross bar



Cross bar kit

PW 480	5130198
PW 640	5130199
PW 800	5130200
PW 1040	5130201

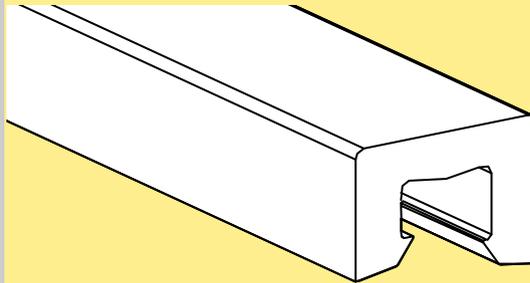
Slide rail



Slide rail
Plastic PA-PE (grey)
Stainless steel

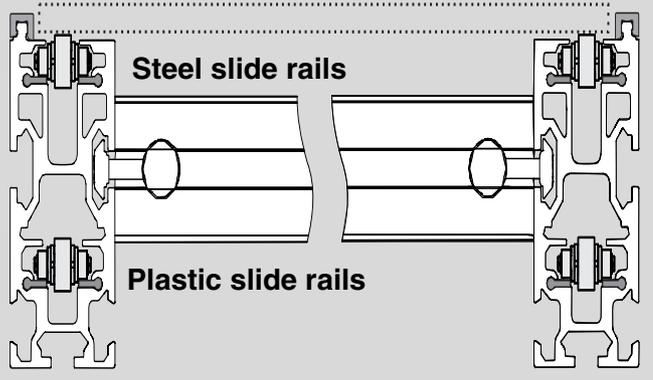
HUCR 3 H
HUCR 3 T

Guide rail cover

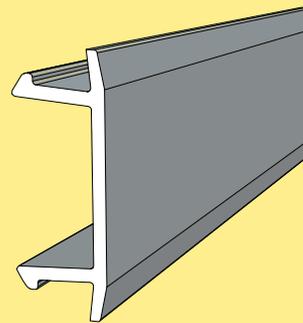


Guide rail cover 25 m
Plastic PA-PE (grey)

HURT 25 H



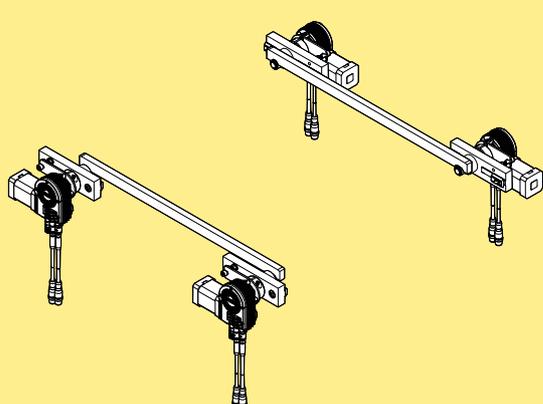
Cover strip



Cover strip for T-slot
Polyvinyl chloride, grey, 25 m
Aluminum 2 m

XCAC 25 P
XCAC 2

Speed booster



Speed booster

HUES SB480
HUES SB640
HUES SB800
HUES SB1040

Accessories kit
 Contains required parts for electrical installation (3x Y-connectors, 11x Sensor cables, 1x Power box).

FLX1001063

Beams are delivered with pre-drilled holes for speed booster installation when ordering system in Flexlink design tool.

Due to the roller top chain concept the pallet transport speed can locally and dynamically be doubled by adding a Speed booster unit. This is useful for example to reduce pallet exchange time for a specific operation identified as a bottle neck in a production flow without doubling the overall speed for the conveyor. The Speed booster function can be chosen and automatically be integrated in the delivery for following modules:

- Stop module HUUS S11 X65
- Queue stop module HUUS Q11 X65P
- Locating module HUUL L11 X85
- Transfer modules HUUT_ type SI, MI, MO, MR X85P

The Speed booster function is always to accelerate the pallet out from the current module. XH

The function is achieved by dynamically raising a ruler underneath the chain touching the mid roller. The roller is forced to rotate which result in double pallet speed locally. XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

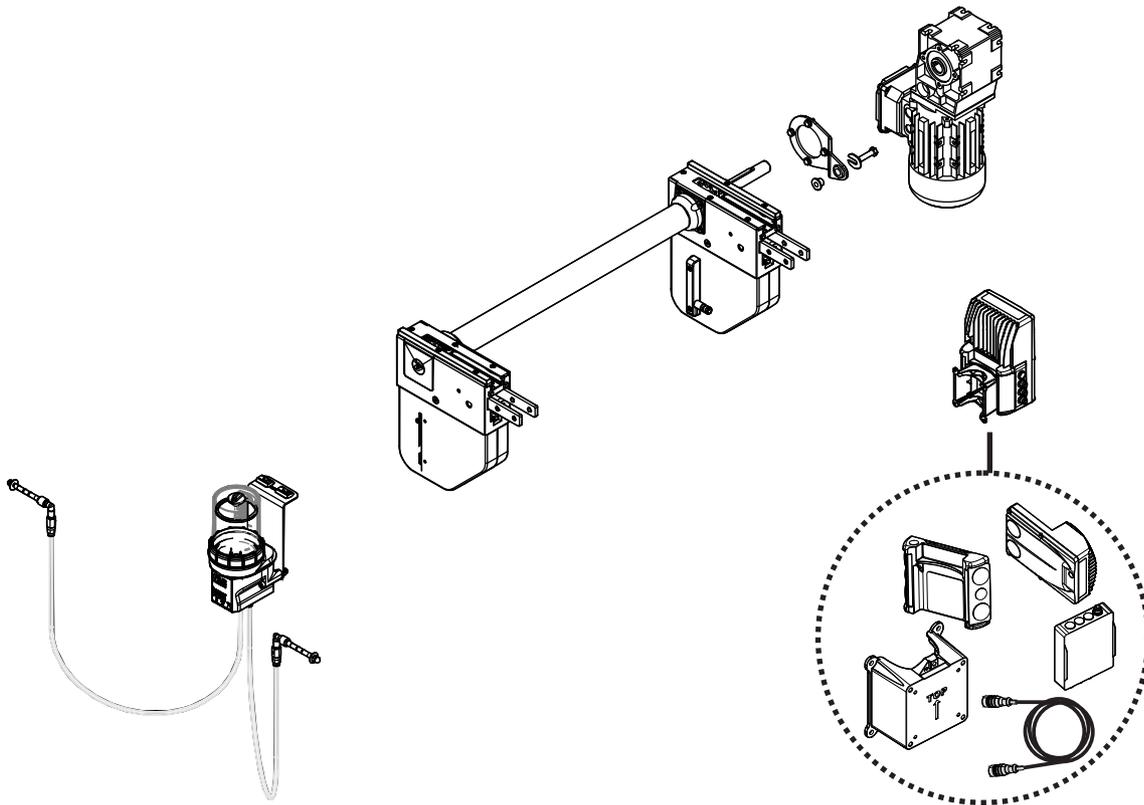
CTL

FST

TR

APX

IDX



Drive unit types

The HU system includes direct driven units, and motors with 120 Hz. Two types of End drive units can be ordered:

- End drive unit incl. slack unit for conveyor length up to max 10 m
- End drive unit without slack for conveyors length up to max 2m

Slack sensor

Slack sensors indicates when it is time for service and to shorten the chain slacks.

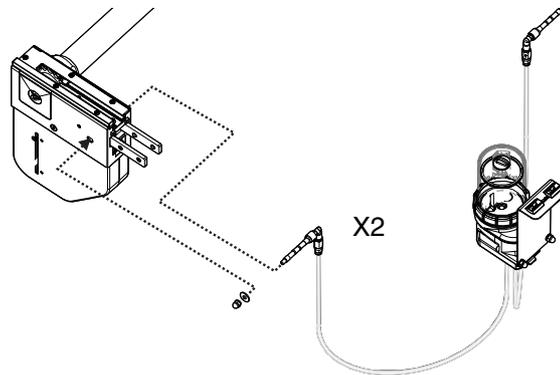
Motor specifications

Motors are available for: 400/480 VAC 50/60Hz.

These Lenze motors (120Hz) are not possible to run without a frequency converter. The motors will be delivered with a ICN8 connector. The frequency converters (Motec) can be ordered in different bus options (Profinet, Ethernet/IP, CANopen) or stand alone (I/O). They also exist in SafeTorque versions (for Profinet and Ethernet/IP). These Motec units are delivered with an adapter plate for wall mounting purpose. The cable from the Motec to the motor is delivered with an ICN8 connector.

Lubrication unit

Lubrication unit include nozzles ready to be installed into the End drive unit. All installation material is included in the delivery system and the unit can easily be connected to the control system.



Ordering information

Drive units with motors must be specified using the web-based configurator. The configurator provides detailed information and step-by-step guidance in the specification process. A product code string is generated, containing the specification details.

Drive units *without* motors can be ordered using the designations in the catalogue but can also be ordered via the configurator.

- Torque arm is always included.

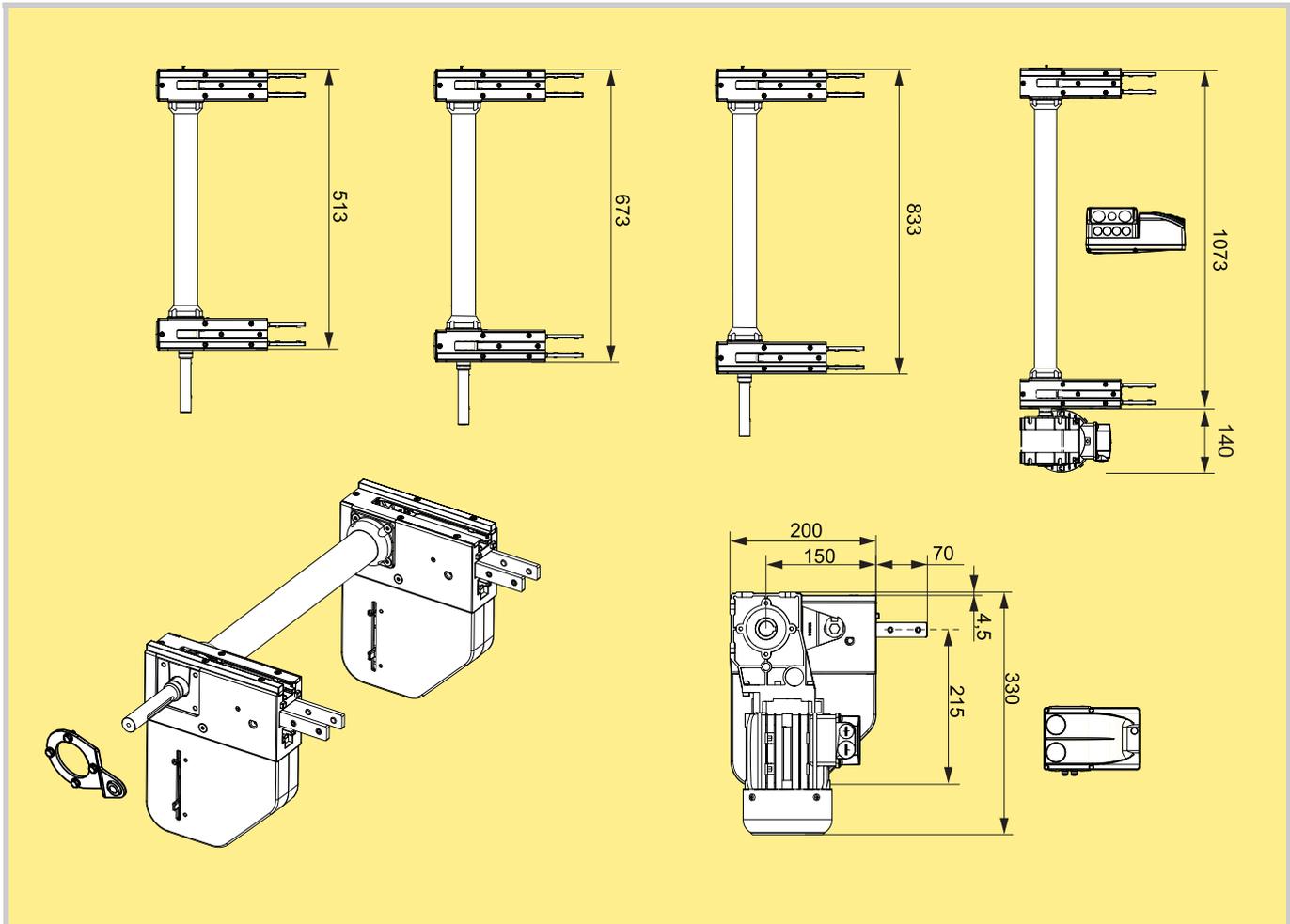
Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Motor position?	Left	L
	Right	R
Motor	No	No
	Yes	G500
Nominal conveyor speed	No Motor	V0-0
	Speed 5-15 m/min	V5-15
Guided?	Yes	G
	No	No
Slack sensor? (only valid for Guided =No)	Yes	S
	No	No
*Frequency inverter?	Yes	C
	No	No
	Profinet	N
	Ethernet/IP	EI
	Standard I/O	IO
	CANopen	CA
	Profinet+Safe torque off	NSTO
	Ethernet+Safe torque off	EISTO
Lubrication unit	Yes	LU
	No	No

Configurator output example:

Item No	Description
HUEB 200	480-L-V5-15-G500-No-S-NSTO-LU-FR

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX

End drive units HU



Left and right drive unit, with pallet guiding, configured item*
Pallet width 480, 640, 800 and 1040 mm

HUEB 200

Left and right drive unit, with pallet guiding, without motor
Pallet width 480 mm
Motor on left side
Motor on right side

HUEB 0 NLPD480
HUEB 0 NRPD480

Left and right drive unit, with pallet guiding, without motor
Pallet width 640 mm
Motor on left side
Motor on right side

HUEB 0 NLPD640
HUEB 0 NRPD640

Left and right drive unit, with pallet guiding, without motor
Pallet width 800 mm
Motor on left side
Motor on right side

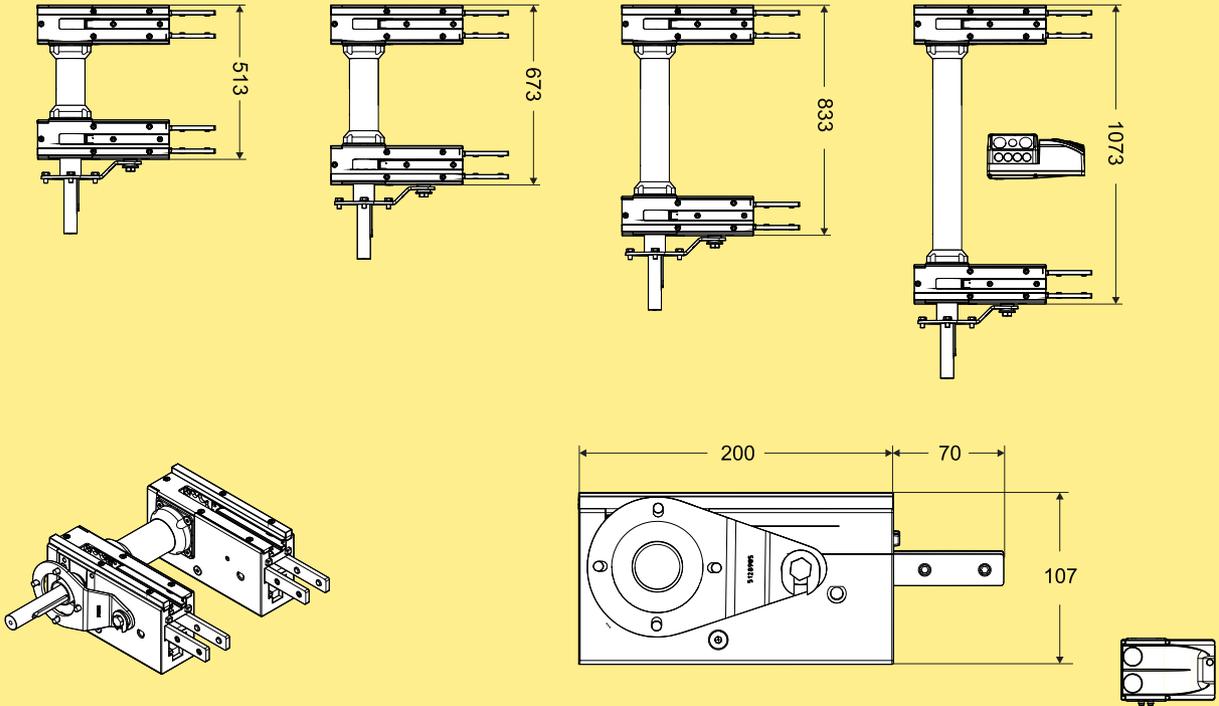
HUEB 0 NLPD800
HUEB 0 NRPD800

Left and right drive unit, with pallet guiding, without motor
Pallet width 1040 mm
Motor on left side
Motor on right side

HUEB 0 NLPD1040
HUEB 0 NRPD1040

* Use online configurator when ordering
Effective track length: 2x0,125 m

End drive unit guided



Left and right drive unit, configured item*
Pallet width 480, 640, 800 and 1040 mm

HUEB 200

Left and right drive unit, with pallet guiding, without motor
Pallet width 480 mm
Motor on left side
Motor on right side

HUEB 0 NLGPD480
HUEB 0 NRGPD480

Left and right drive unit, with pallet guiding, without motor
Pallet width 640 mm
Motor on left side
Motor on right side

HUEB 0 NLGPD640
HUEB 0 NRGPD640

Left and right drive unit, with pallet guiding, without motor
Pallet width 800 mm
Motor on left side
Motor on right side

HUEB 0 NLGPD800
HUEB 0 NRGPD800

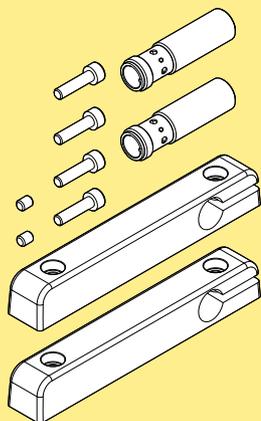
Left and right drive unit, with pallet guiding, without motor
Pallet width 1040 mm
Motor on left side
Motor on right side

HUEB 0 NLGPD1040
HUEB 0 NRGPD1040

* Use online configurator when ordering
Effective track length: 2x0,125 m

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX

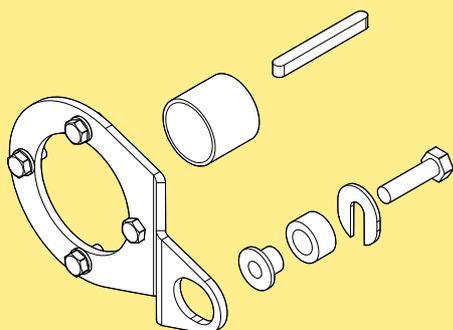
Sensor bracket kit



Chain slack sensors

FLX1000491

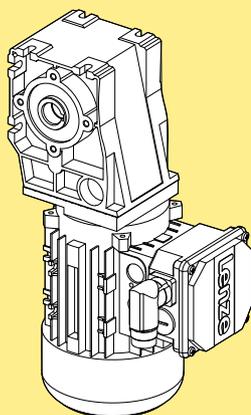
Torque arm kit



For Lenze G500-B45 and SEW SA37

5130414

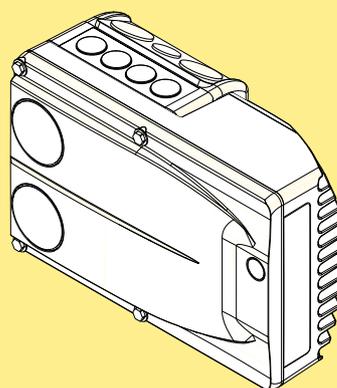
Motor/Gear



Lenze 61074650

5130012

Frequency inverter

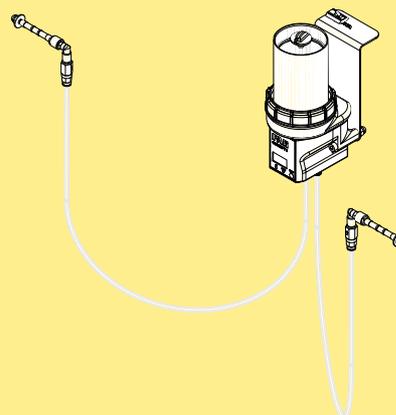


Frequency inverter

PROFINET & STO	5130014
PROFINET	5130015
Ethernet/IP & STO	5130016
Ethernet/IP	5130017
Standard I/O	5130018
CANopen	5131121

Motor cable included

Lubricate unit



Lubricate unit, (without oil)

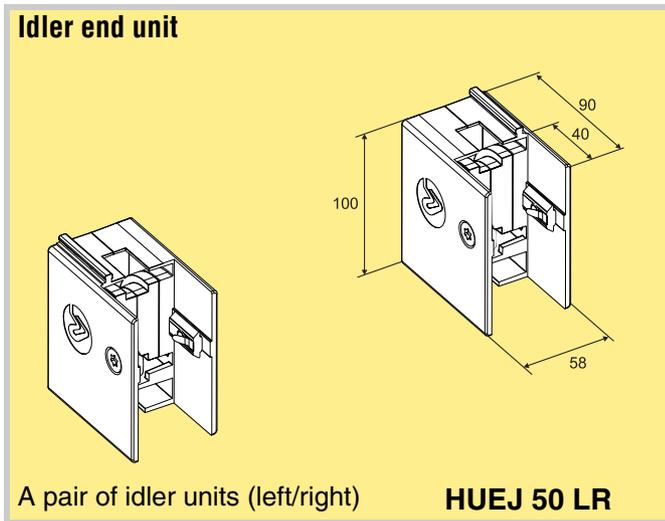
5131172

Including all cables

Recommended oil, Klüber Structovis GHD

Idler end unit Introduction

The idler end can be used for all type of roller chains of type HUTR. The length of this compact idler end is 50 mm. A cam is supporting the chain. The energy losses is low due to the chain roller concept.



PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

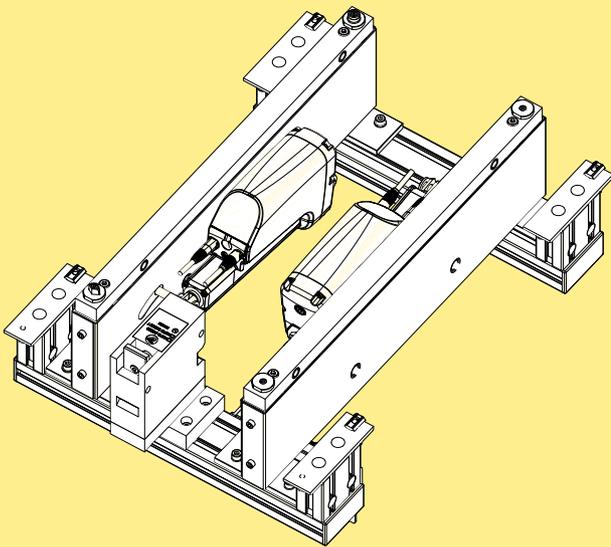
APX

IDX

Locating modules

The Locating module is used to positioning the pallet in preparation for operations such as assembly, machining or testing. The locating module lifting mechanism is driven by two electric actuators. The two locating pins are both placed and fixed on one side in the same lift ruler which eliminate all need for fine adjustments or jam risk between pins and pallet bushings. The unit has an repeatability of +/-0,1 mm (x, y, z). Max permissible load/ruler including pallet weight is 2500 N. A speed booster function can be ordered as an option to reduce pallet exchange time if needed. For more detailed information see section "Speed booster". RFID read/writer can be ordered as an option. All installation material for bus-connection and power supply is included. See section *Distributed control* for detailed info.

Locating module



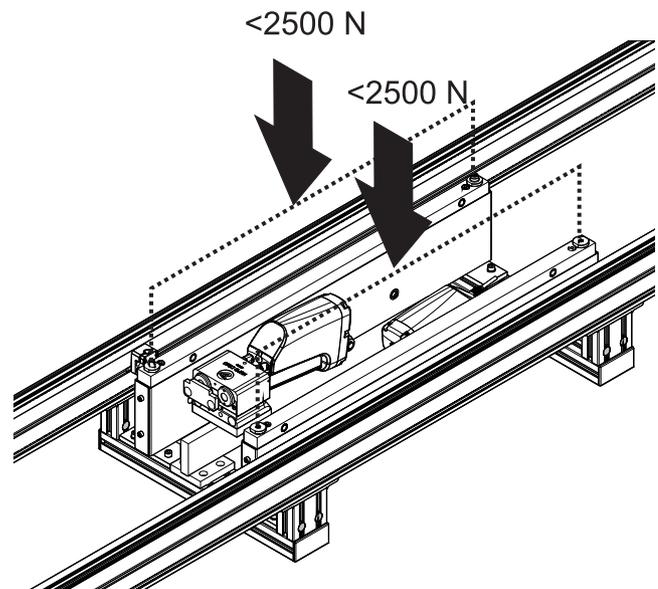
Configured item

HUUL E11

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
	Pneumatic incl. sensor	PS
Speed booster?	Yes	SB
	No	No
RFID writer/reader?	Yes	RF
	No	No
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUL 11	480x480-E-SB-RF-C



There are 5 different types of standard transfer modules.

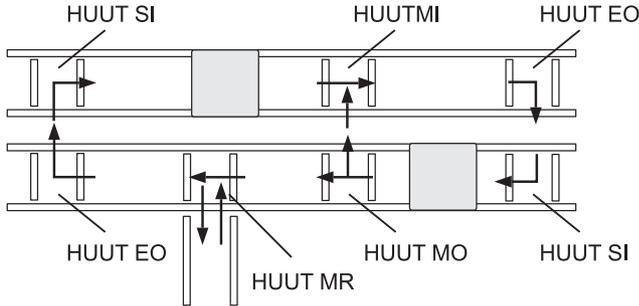
HUUT EO:End (of a conveyor), Out feeding

HUUT SI:Start (of a conveyor), In feeding

HUUT MO:Mid (of a conveyor), Out feeding

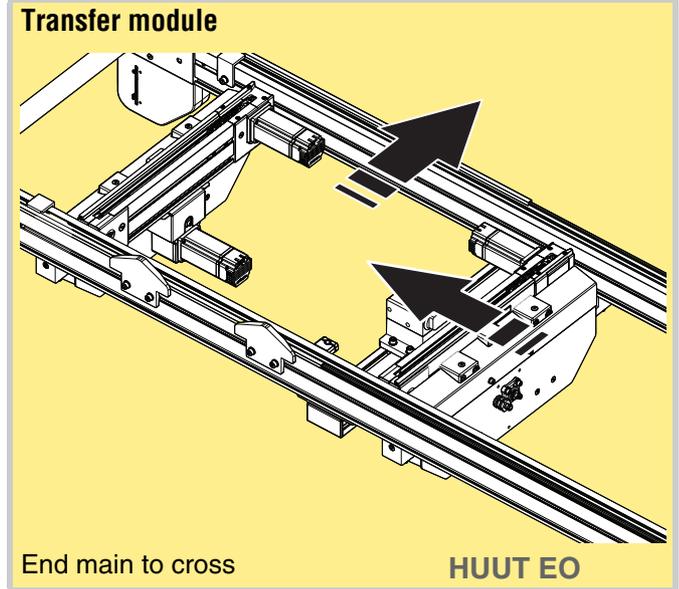
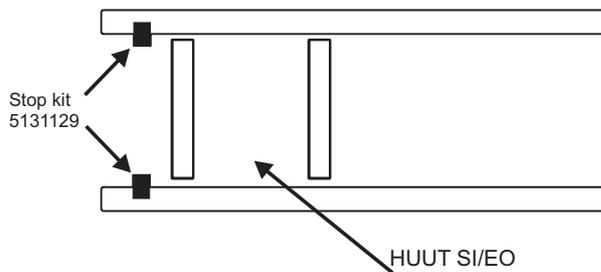
HUUT MI:Mid (of a conveyor), In feeding

HUUT MR:Mid (of a conveyor), Return feeding



In all Transfer modules both pallet transport and pallet lift function are electric driven by step motors. Together with the Flexlink distributed Controller this enable smooth and silent pallet movements. Damped stops can be eliminated for all pallet "In feeding" (SI, MI and MR) as the pallet speed can be ramped down in a very controlled way. For pallet transfer a Roller top chain of type HUTR_B SC is used and no lubrication is needed in any transfer module. The Roller top chain steel rollers, roll on an underneath steel bar which has very low friction and wear but is a very rigid and robust support for transporting heavier pallets. A speed booster function can be ordered as an option to reduce cycle time if needed. RFID read/writer can be ordered as an option. All installation material for bus-connection and power supply is included. Se section *Distributed control* for detailed info.

For personal safety HUUT SI and HUUT EO are equipped with stop kits that are placed at the conveyor ends. This eliminates the mistake of a pallet falling off at the conveyor end.

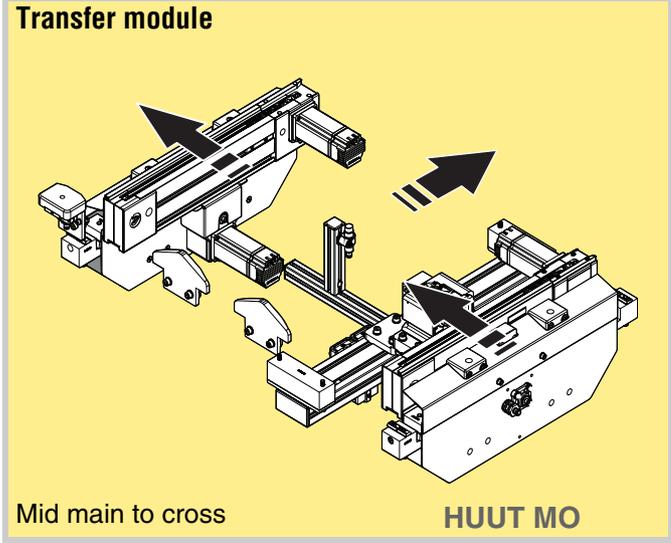
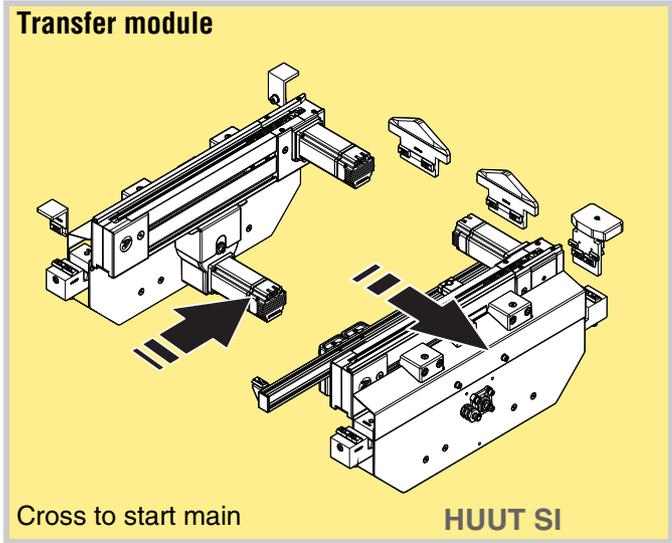


Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
	Type of damper unit?	Electric
	Pneumatic	P
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUT EO	480x480-E-C

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX



Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Speed booster?	Yes	SB
	No	P
Controller?	Yes	C
	No	No

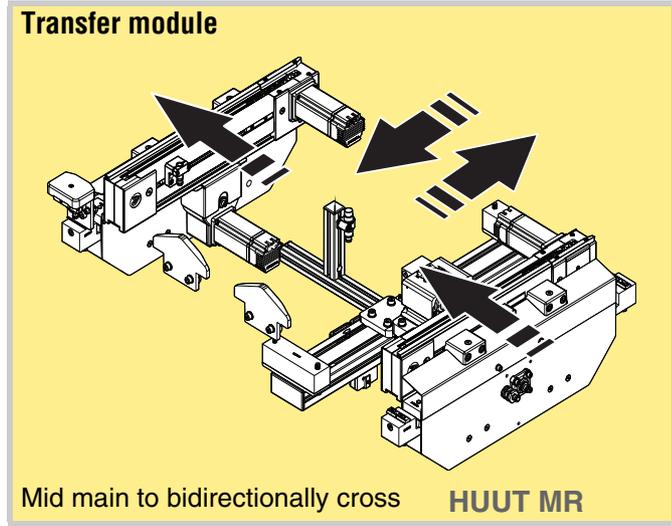
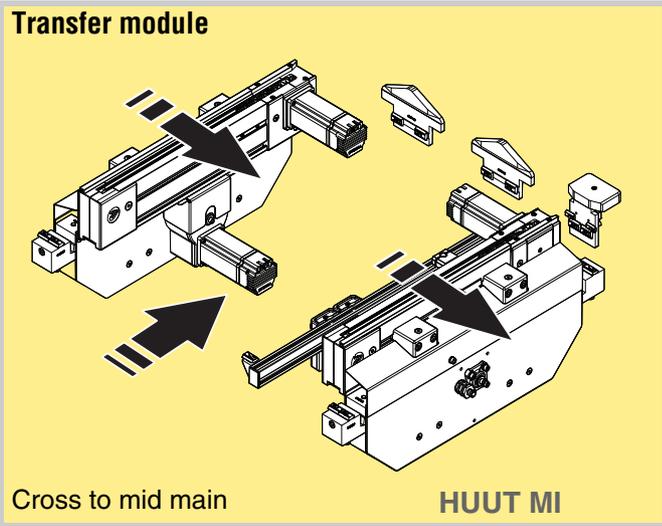
Configurator output example:

Item No	Description
HUUT SI	480x480-SB-C

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
Speed booster?	Yes	SB
	No	P
RFID reader/writer	Yes	RF
	No	No
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUT MO	480x480-E-SB-RF-C



Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Speed booster?	Yes	SB
	No	P
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUT MI	480x480-SB-C

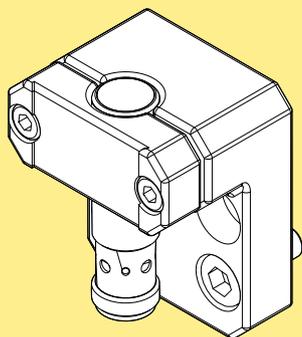
Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
Speed booster?	Yes	SB
	No	P
RFID reader/writer	Yes	RF
	No	No
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUT MR	480x480-E-SB-RF-C

PO
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX

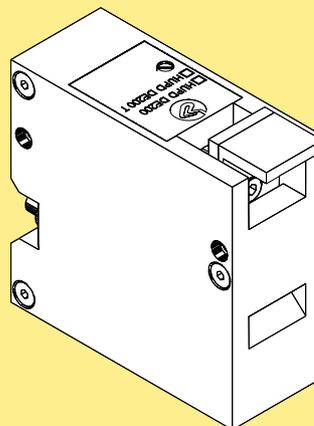
Sensor



Sensor
Complete kit
(Incl. sensor, bracket XTPB
V002, sensor, cable, connectors
and fasteners)

FLX1000736

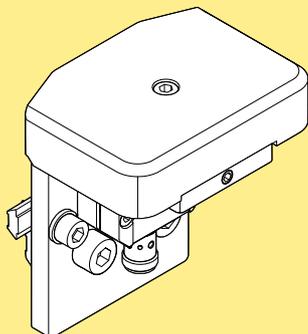
Pallet stop, electric



Pallet stop, damped 200 kg
for transfer

HUPD DE200 T

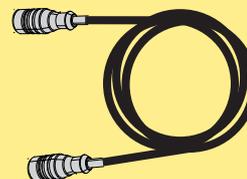
Sensor



Sensor
Complete kit
(Incl. sensor, bracket XTPB
V003, sensor, cable, connectors
and fasteners)

FLX1000740

Special cable



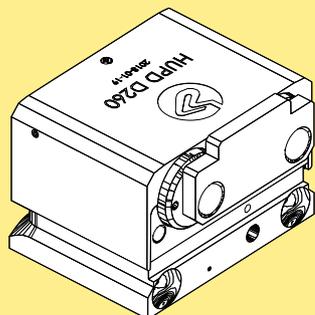
Cable for electric stops
(for HUPD DE200, HUPD
DE200T and HUPD DE410)

5129331

Maximum permissible pallet weight vs conveyor speed for the pallet stops:

	Conveyor speed m/min		
	5	10	15
HUPD DE200 (T)	200 kg	160 kg	120 kg
HUPD D260	260 kg	230 kg	200 kg

Pallet stop, pneumatic



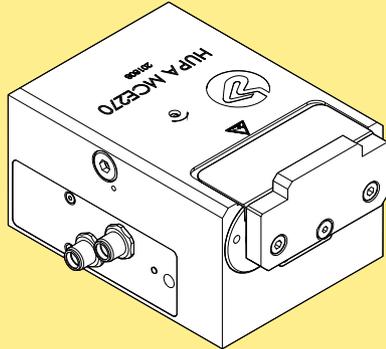
Pallet stop, damped 260 kg

HUPD D260

Maximum permissible pallet weight vs conveyor speed:

	Conveyor speed m/min		
	5	10	15
HUPA MCE270	270 kg	210 kg	195 kg
HUPA MC270	270 kg	210 kg	190 kg

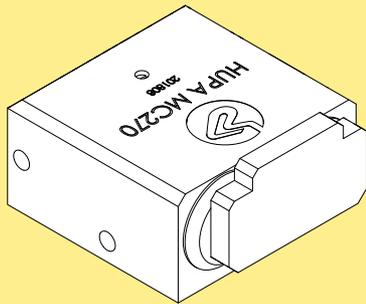
Transfer damper, electric



Electric damper

HUPA MCE270

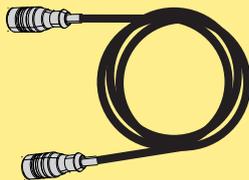
Transfer damper, pneumatic



Pneumatic damper

HUPA MC270

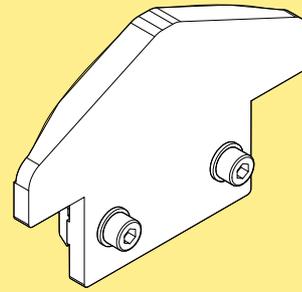
Special cable



Cable for electric damper
(for HUPD MCE270)

5129520

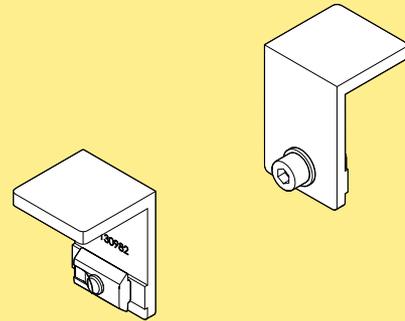
Stop kit, traverse



Including all fasteners

5131147

Stop kit, longitudinal



Including all fasteners

5131129

- PO
- CC
- X45
- XS
- X65
- X65P
- X85
- X85P
- XH
- XK
- XKP
- X180
- X300
- GR
- CS
- XT
- HU**
- WL
- WK
- XC
- XF
- XD
- ELV
- CTL
- FST
- TR
- APX
- IDX

Stop modules

There are two types of Stop modules:

- Single pallet stop module HUUS S11 to be used for a manual workstation or a low accuracy stop position.
- Queue stop module HUUS Q11 to be used for queue of pallets (2 pallets or more)

The modules have to be configured in Flexlink configurator where below options are available.

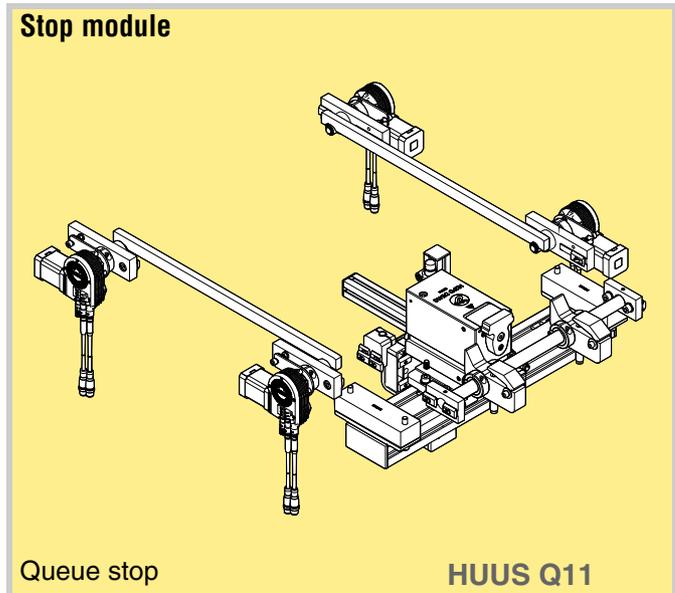
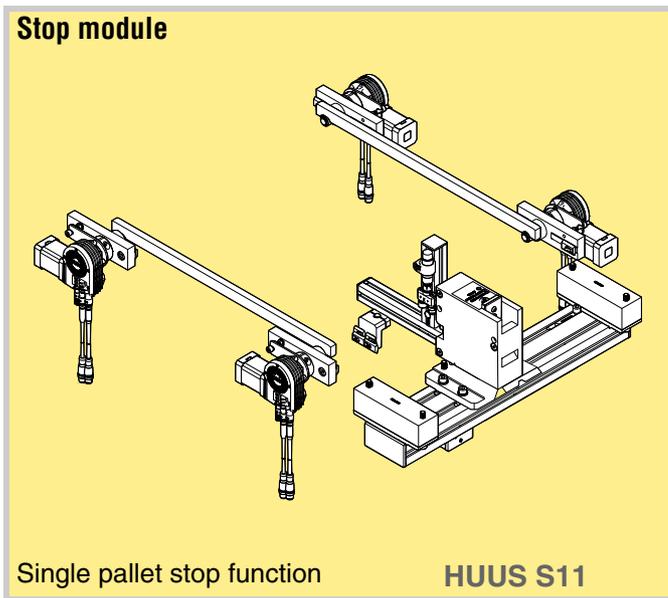
A controller contains the pre-defined module control logics for quick and easy installation and start up. Modules are delivered including all installation material incl. controller, sensors, cables, RFID reader/writer if chosen. A speed booster can be included.

Ordering HUUS S11

Question	Choices	Description code
Pallet width PW?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet length PL?	480 mm	480
	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E (HUPD DE200)
	Pneumatic	P (HUPD D260)
	Pneumatic incl. sensors	PS
Speed booster?	Yes	SB
	No	No
RFID reader/writer?	Yes	RF
	No	No
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUS S11	480x480-E-SB-RF-C



Ordering HUUS Q11

Question	Choices	Description code
Pallet width	480 mm	480
PW?	640 mm	640
	800 mm	800
	1040 mm	1040
Pallet width	480 mm	480
PL?	640 mm	640
	800 mm	800
	1040 mm	1040
Type of stop unit?	Electric	E
	Pneumatic	P
	Pneumatic incl. sensors	PS
Stop unit size?	<i>Electric:</i> max 200 kg	200 (HUPD DE200)
	Max 400 kg	400 (HUPD DE410)
	<i>Pneumatic:</i> max 260 kg	260 (HUPD D260)
	max 500 kg	500 (HUPD D500)
Number of queue dampers?	0,1,2,...n (max 3)	QDn (See stop module accessories)
Extra damper?	0,1,2	Dn
Speed booster?	Yes	SB
	No	No
RFID reader/writer?	Yes	RF
	No	No
Controller?	Yes	C
	No	No

Configurator output example:

Item No	Description
HUUS Q11	480x480-E-200-QD4-D1-SB-RF-C

PO

CC

X45

XS

X65

X65P

X85

X85P

XH

XK

XKP

X180

X300

GR

CS

XT

HU

WL

WK

XC

XF

XD

ELV

CTL

FST

TR

APX

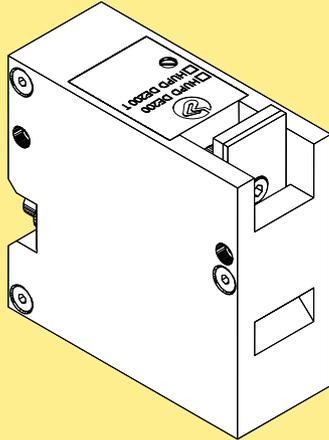
IDX

Stop module accessories

Maximum permissible weight of a group of pallets:

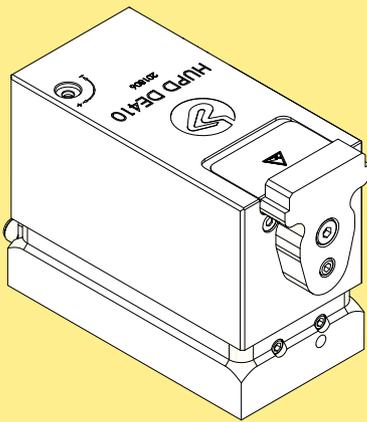
	Conveyor speed m/min		
	5	10	15
HUPD DE200 (T)	200 kg	160 kg	120 kg
HUPD DE410	410 kg	300 kg	220 kg
HUPD D260	260 kg	230 kg	200 kg
HUPD D500	500 kg	330 kg	240 kg

Pallet stop, electric



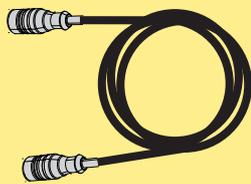
Pallet stop, damped 200 kg **HUPD DE200**

Queue stop, electric



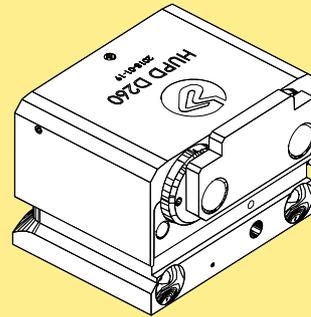
Pallet stop, damped 410 kg **HUPD DE410**

Cable



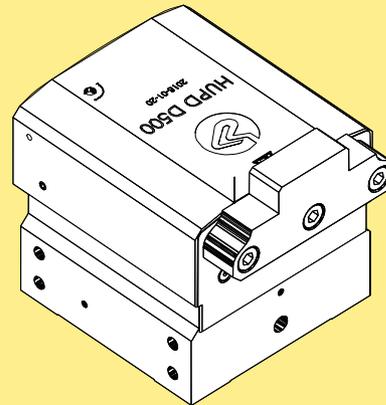
Cable for electric stops **5129331**

Pallet stop, pneumatic



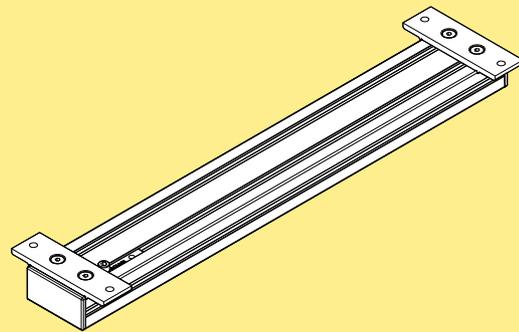
Pallet stop, damped 260 kg **HUPD D260**

Queue stop, pneumatic



Pallet stop, damped 500 kg **HUPD D500**

Support



Support kit
 PW 480 **5129860**
 PW 640 **5129861**
 PW 800 **5129862**
 PW 1040 **5129863**

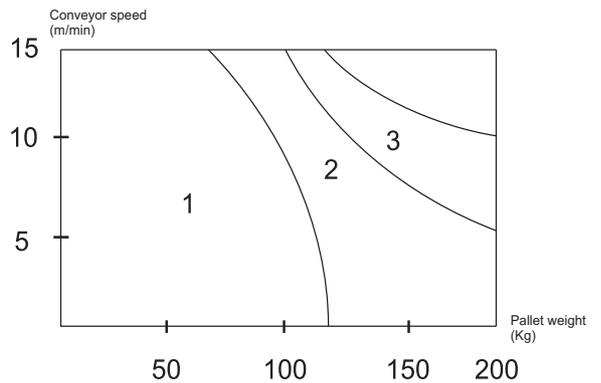
Queue damper

A queue damper is used when noise level and gentle handling of the product is important. It also reduces the impact from the pallet that goes into the framework of a line. It's an option that can be ordered together with a queue stop.

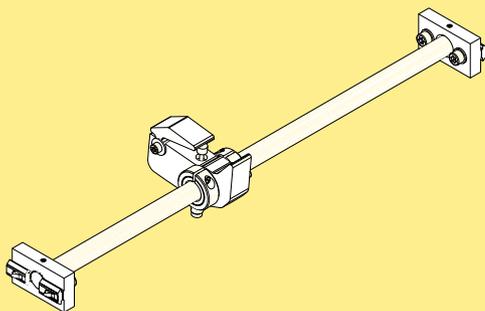
Function: When the first pallet enters a queue the damped stop stops the pallet in a smooth way. At the same time the queue damper is "activated" by the rear end of the first pallet. So before the second pallet hits the first one it is damped by the queue damper. Without queue damper the second pallet would hit the first (still standing) pallet with full speed.

One queue damper can be placed for each possible end position of pallet in a queue. For example a queue stop function for max 3 pallets should contain one damped stop and 2 queue dampers.

Numbers of queue damper arm needed



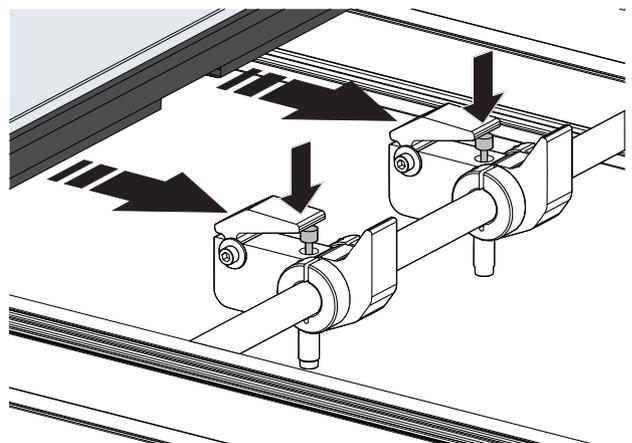
Queue damper, start kit



Queue damper start kit

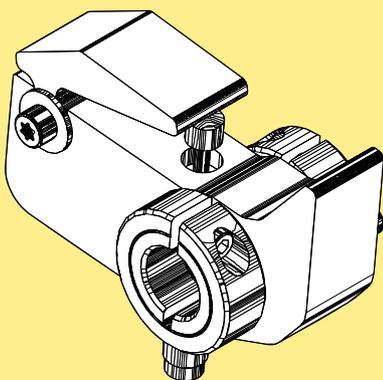
PW 480
PW 640 (picture)
PW 800
PW 1040

HUPA DQ 480
HUPA DQ 640
HUPA DQ 800
HUPA DQ 1040



Queue damper

Queue damper arm



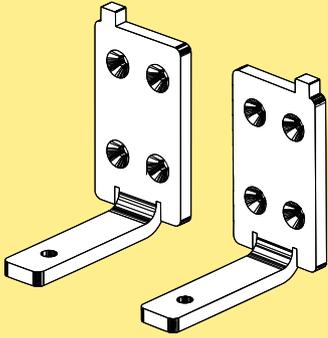
Complete arm

HUPA DQ

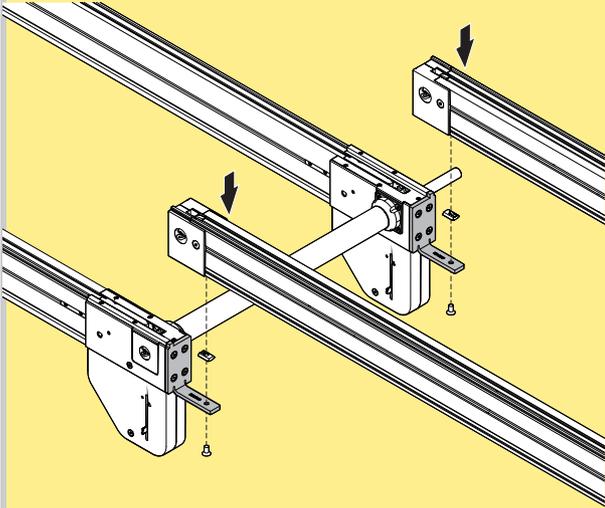
P0
CC
X45
XS
X65
X65P
X85
X85P
XH
XK
XKP
X180
X300
GR
CS
XT
HU
WL
WK
XC
XF
XD
ELV
CTL
FST
TR
APX
IDX

Connecting kits

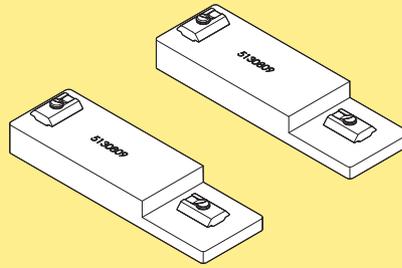
Connecting kit, end-to-end



Connecting kit (incl. left and right) **5131154**
Including fasteners

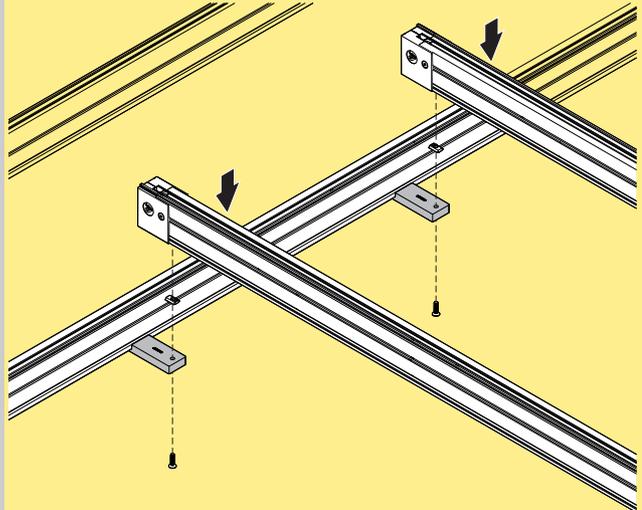


Connecting bracket kit, beam side to Idler end unit

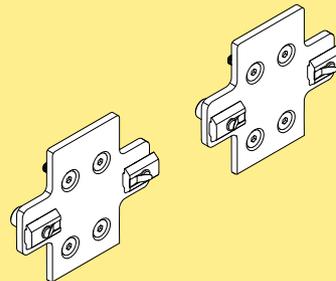


Connecting kit, one pair
Including fasteners

5131153

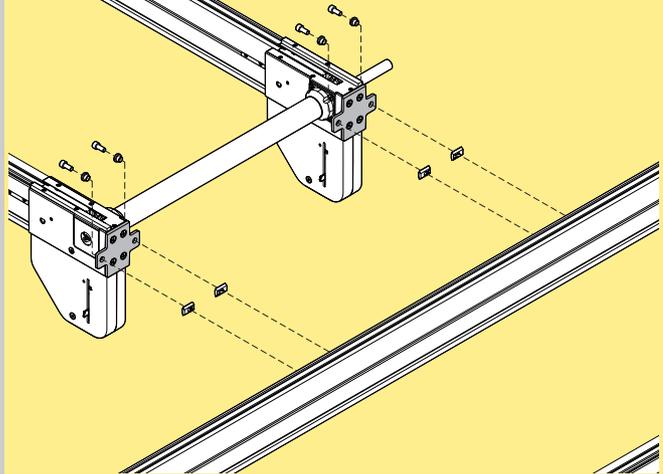


Connecting bracket kit, end drive unit to beam side



Connecting kit, one pair
Including fasteners

5131158

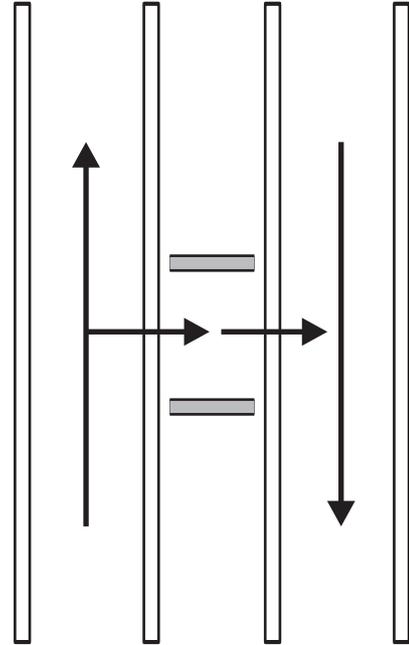


Roller bridges

Roller bridges

Roller bridge
 Length 110 for all widths **FLX1001828**
 Length 212 for 640, 800 and 1040 **FLX1001829**
 Length 313 for 800 and 1040 **FLX1001830**
 Length 414 for 1040 **FLX1001831**

*Note. Comes in pair of two.
Including all fasteners.*



Support modules

Two types of support modules are available for one- and two level systems.

Support module

Type H **HUUF S01**

Note: TOP = Top of Pallet

HUUF S01

Question	Choices (mm)	Description code
Pallet width	480	480
PW?	640	640
	800	800
	1040	1040
Top of pallet?	$400 \leq H1 \leq 1500$	H1*
Floor attachment?	Yes	FA
	No	No

Configurator output example:

Item No	Description
HUUF S01	480-400-FA

HUUF S03

Question	Choices (mm)	Description code
Pallet width	480	480
PW?	640	640
	800	800
	1040	1040
TOP upper level (H1)?	$600 \leq H1 \leq 1500$	H1*
TOP lower level (H2)?	$300 \leq H2 \leq H1-300$	H2*
Floor attachment?	Yes	FA
	No	No

Configurator output example:

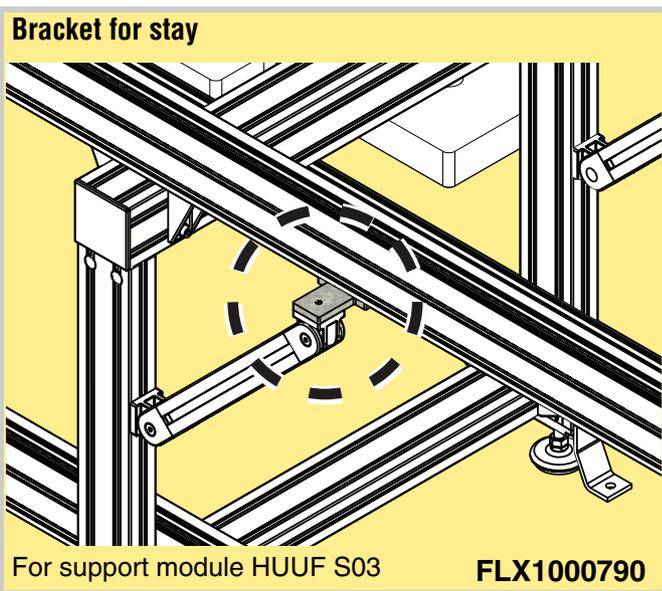
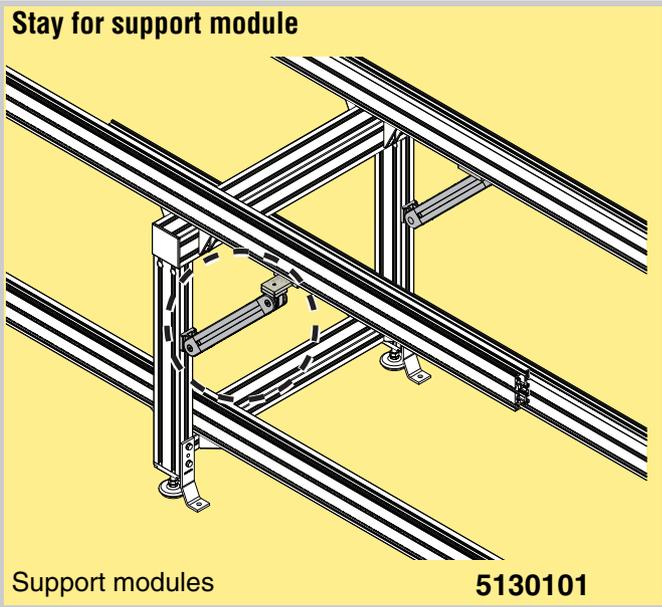
Item No	Description
HUUF S01	480-600-300-FA

*H1 and H2 is based on 12 mm pallet.

Support module

Two levels **HUUF S03**

Note:
 TOP1= Top of pallet upper level
 TOP2= Top of pallet lower level



- PO
- CC
- X45
- XS
- X65
- X65P
- X85
- X85P
- XH
- XK
- XKP
- X180
- X300
- GR
- CS
- XT
- HU**
- WL
- WK
- XC
- XF
- XD
- ELV
- CTL
- FST
- TR
- APX
- IDX

